AMENDMENTS TO THE CLAIMS

1. (Original) A method for inducing mild hypothermia in a patient body, comprising:

positioning a source of ultrasound energy relative to a patient skull;

applying ultrasound energy to a tissue region that at least partially coincides with a preoptic anterior hypothalamus (POAH) region in the patient skull to affect thermoregulatory responses of the body;

providing artificial cooling to a portion of the patient body to reduce a core temperature of the body.

2. (Original) The method of Claim 1, wherein said step of applying is performed extracorporeally.

3. (Original) The method of Claim 1, wherein said step of applying comprises applying a predetermined amount of ultrasound energy in order to increase the temperature of the POAH between about 0.5° C and about 4° C.

4. (Original) The method of Claim 1, wherein said step of providing artificial cooling comprises providing intracorporeal cooling.

5. (Original) The method of Claim 4, wherein said step of providing intracorporeal cooling comprises one of:

endovascular cooling; and

cooling of the peritoneum.

6. (Original) The method of Claim 1, wherein said step of providing artificial cooling comprises cooling an external surface of said body.

7. (Original) The method of Claim 6, wherein said cooling is provided using a contact cooling means.

8. (Original) The method of Claim 7, wherein said contact cooling means circulates a thermal exchange fluid relative to a tissue region of said patient body to provide said cooling.

9. (Original) The method of Claim 8, wherein said thermal exchange fluid directly contacts patient tissue to provide said cooling.

10. (Original) The method of Claim 8, wherein said thermal exchange fluid circulates through a contact pad to conduct thermal energy away from said tissue region.

11. (Original) The method of Claim 10, wherein said thermal exchange fluid circulates through at least one channel formed by a least one rib in an internal structure of said pad.

12. (Original) The method of Claim 10, wherein said contact pad is adhered to said body.

13. (Original) The method of Claim 12, wherein said contact pad is adhered using a thermally conductive hydrogel.

14. (Original) The method of Claim 8, wherein said thermal exchange fluid circulates under a negative pressure.

15. (Original) The method of Claim 6, wherein said cooling is localized to the head of the patient.

16. (Original) A method for providing localized heating to the preoptic anterior hypothalamus (POAH) of a body to induce mild hypothermia in that body comprising:

positioning a source of ultrasound energy relative to a patient skull;

focusing said source of ultrasound energy on a tissue region within the patient skull, wherein said tissue region at least partially encompasses the preoptic anterior hypothalamus (POAH) of a body; and

applying a predetermined amount of ultrasound energy to said tissue region, wherein said ultrasound increases the temperature of said tissue region to heat the POAH.

17. (Original) The method of Claim 16, wherein said step of applying comprises applying a predetermined amount of ultrasound energy to increase the temperature of said tissue region between about 0.5° C and about 4° C.

18. (Original) The method of Claim 17, wherein, for a given tissue type in said tissue region, said tissue is heated evenly.

19. (Original) The method of Claim 16, wherein applying comprises applying ultrasound energy having a power between about 0.05 W and about 100 W.

20. (Original) The method of Claim 16, wherein applying comprises applying ultrasound energy having an intensity between about 2.0 W/cm^2 and about 100 W/cm^2.

21. (Original) The method of Claim 16, wherein applying comprises applying ultrasound energy having a frequency between about 0.5 MHz and about 10 MHz.

22. (Original) The method of Claim 16, further comprising:

providing cooling to at least a portion of the patient's body.

23. (Original) The method of Claim 22, wherein said cooling is provided to an external portion of the patient' body.

24. (Original) The method of Claim 23, wherein said cooling is provided via direct surface contact.

25. (Original) The method of Claim 24, wherein said cooling is localized to a patient's head.

26. (Original) The method of Claim 16, wherein said step of positioning comprises positioning said source extracorporeally to the patient skull.

27. (Original) The method of Claim 26, wherein said source is positioned relative to a transcranial window such that ultrasound may pass into the patient skull.

28. (Original) The method of Claim 27, wherein said transcranial window is selected from a group consisting of:

a transocipitl window;

a transtemporal window; and

a transorbital window.

29. (Original) The method of Claim 16, wherein said step of focusing further comprises: identifying said tissue region utilizing a diagnostic visualization procedure.

30. (Original) The method of Claim 29, wherein said diagnostic visualization procedure comprises at least one of diagnostic ultrasound or MRI.

31. (Original) The method of Claim 16, further comprising monitoring at least one of:

a core body temperature sensor operative to provide a signal indicative of the core body temperature of a patient body; and

a skin conductivity sensor operative to provide a signal indicative of skin conductivity.

32. (Original) The method of Claim 31, wherein said predetermined amount of ultrasound energy is adjusted based on at least one of said signals.

33. (Original) A system for providing localized heating to the preoptic anterior hypothalamus (POAH) of a body to induce mild hypothermia in that body comprising:

a source of ultrasound energy operative to focus ultrasound energy on a tissue region within a patient skull, wherein the tissue region at least partially encompasses said POAH;

at least one sensor positionable at a predetermined location on the body which provides feedback signals indicative of a temperature of the body, wherein said at least one sensor includes at least one of:

a core body temperature sensor positionable at a first predetermined location on the

body which provides a first feedback signal indicative of the core temperature of the body; and

a skin conductivity sensor positionable at a second predetermined location on the body which provides a second feedback signal indicative of skin conductivity; and

a controller connectable to the at least one sensor which controls power to the source of ultrasound energy in an amount proportional to the magnitude of the feedback signal received from the at least one sensor.

34. (Original) The system of Claim 33, further including a cooling system for providing artificial cooling to at least a first portion of the body.

35. (Original) The system of Claim 34 wherein the cooling system comprises

a membrane through which a thermal exchange fluid may be circulated.

36. (Original) The system of Claim 35, wherein the membrane is adapted to provide surface contact cooling.

37. (Original) The system of Claim 36, wherein said membrane includes internal structure to allow said thermal exchange fluid to be circulated under negative pressure.

38. (Original) The system of Claim 35 wherein said membrane is adapted to allow the direct coolant contact a portion of the body.

39. (Original) The system of Claim 38, wherein said membrane is adapted to be positioned on the head of a patient.

40. (Original) The system of Claim 35, wherein said cooling system further includes:

a pumping device;

a fluid reservoir; and

a heat exchanger for controlling the temperature of the thermal exchange fluid.

41. (Original) The system of Claim 33, wherein said source comprises an ultrasound transducer.

42. (Original) The system of Claim 41, wherein said ultrasound transducer is selected from a group of focusing transducers consisting of:

spherical transducers;

lens transducers;

reflective transducers; and

electrically focusing transducers.

43. (Original) The system of claim 33, wherein the core body temperature sensor is attachable to at least one of: tympanic membrane, esophageal, and nasopharyngeal.

44. (Original) The system of claim 33, wherein the skin conductivity sensor comprises at least two electrodes attachable to an exterior skin surface of the body, across which the conductivity of bodily fluids emitted by the body are measurable.